To Host

100

Port 0 →To First Device

Port 1 →To Second Device

Fig. 1 Prior art

200

204

210

212

202

Pick-up

Medium

Host

214

206

208

216

Controller

Buffer
memory

Fig. 2 Prior art

300 ─➤

306
302
210
212

Host

Pick-up ── Medium

310
308
208
214

Controller
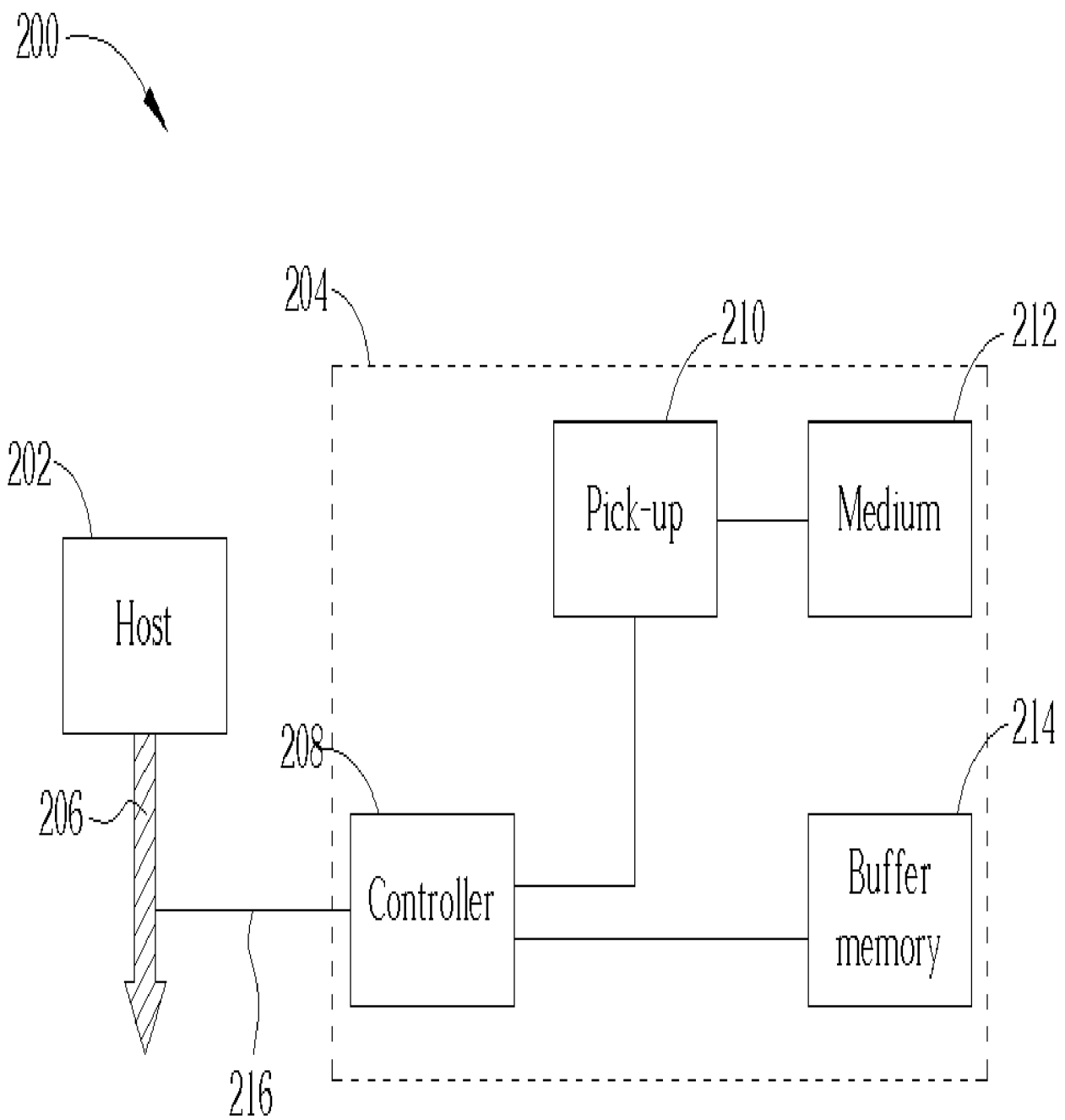
Buffer
memory

304
312
314
316

Controller ──────── Flash card

318

Buffer
memory
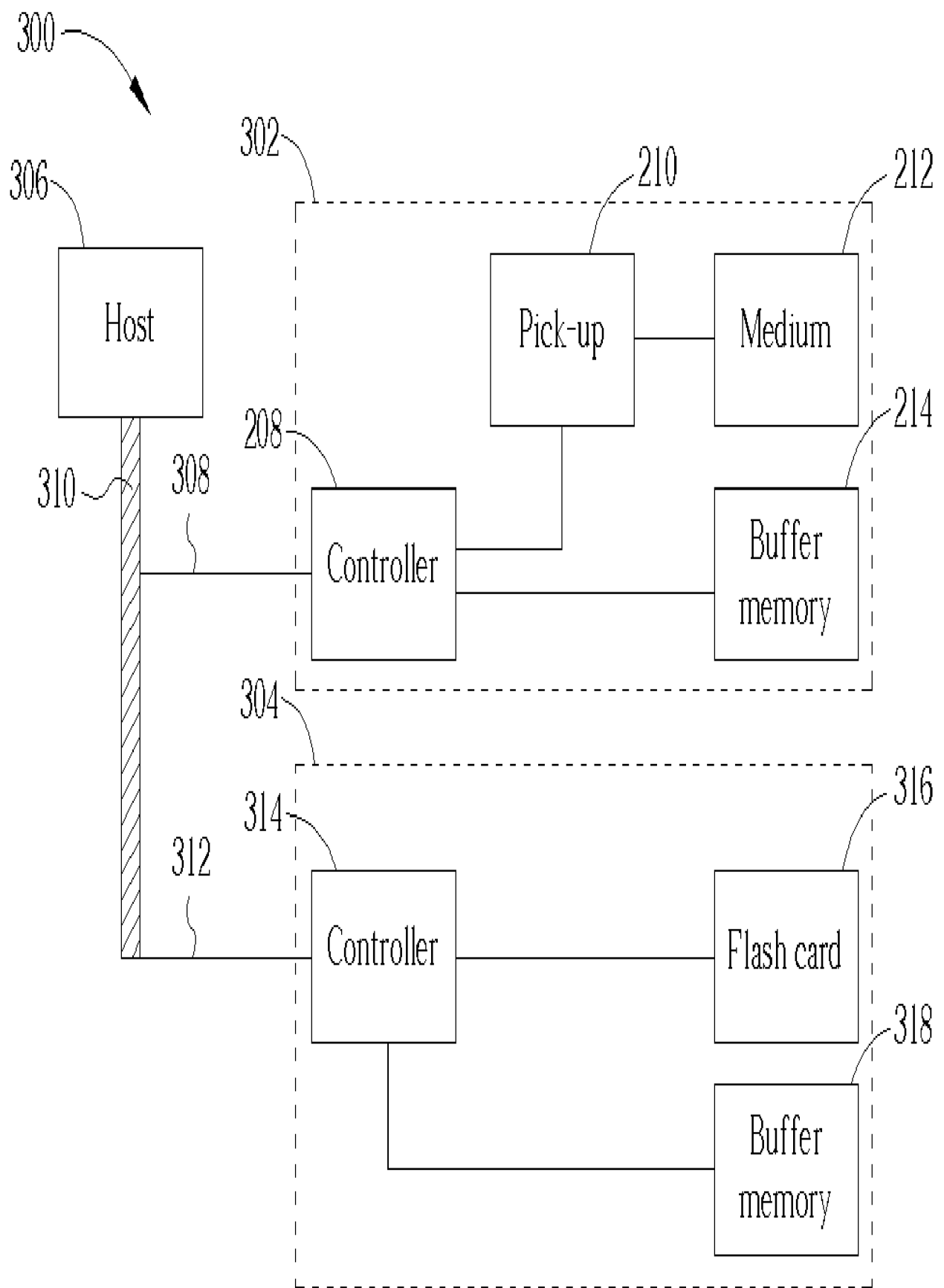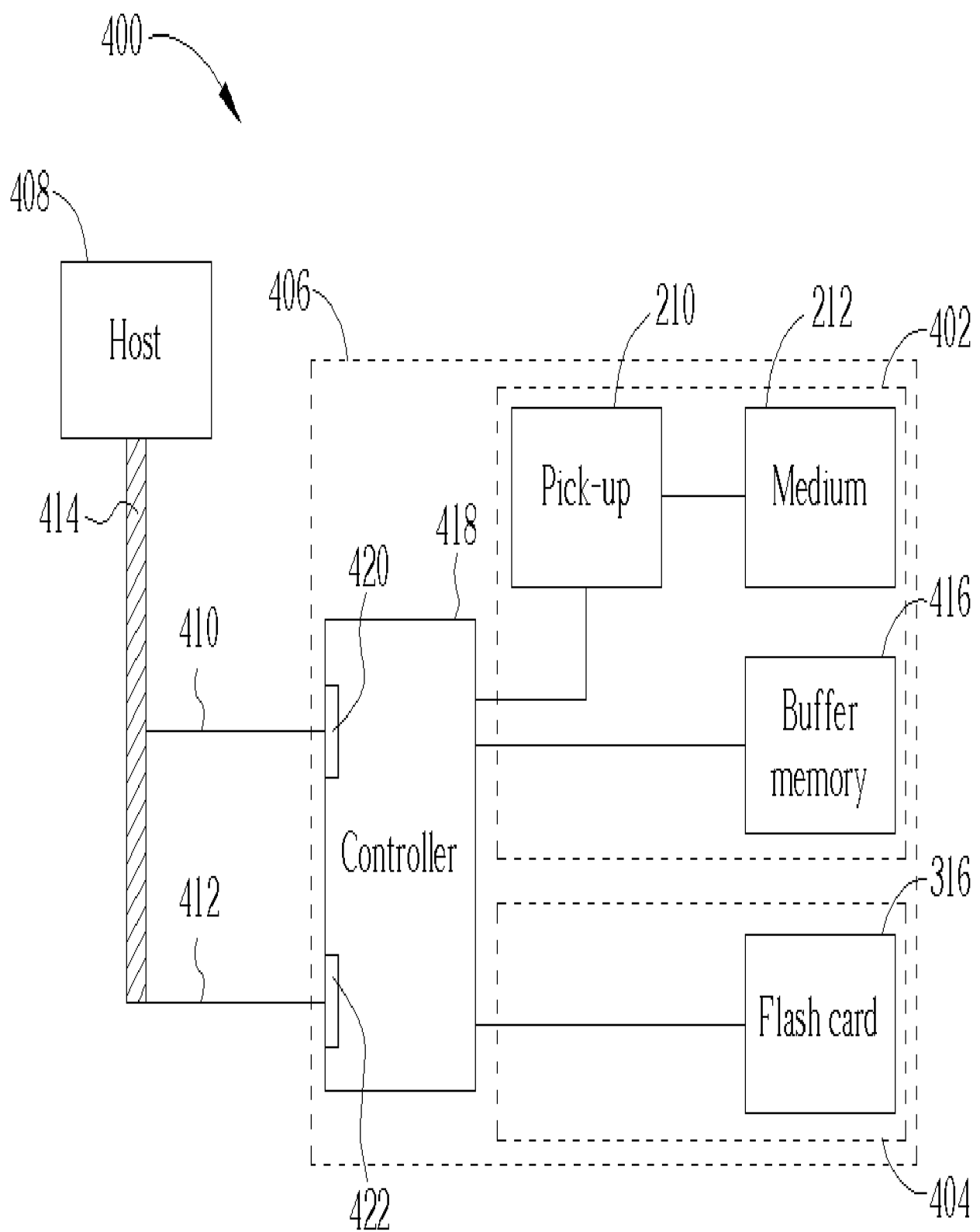
Fig. 3 Prior art

Fig. 4 Prior art

Fig. 5 Prior art

600 —

602

601

210 212 604

Host

616

610

612

Pick-up — Medium

Controller

606

316

Flash card

Buffer
memory

618

614

608

Other
devices
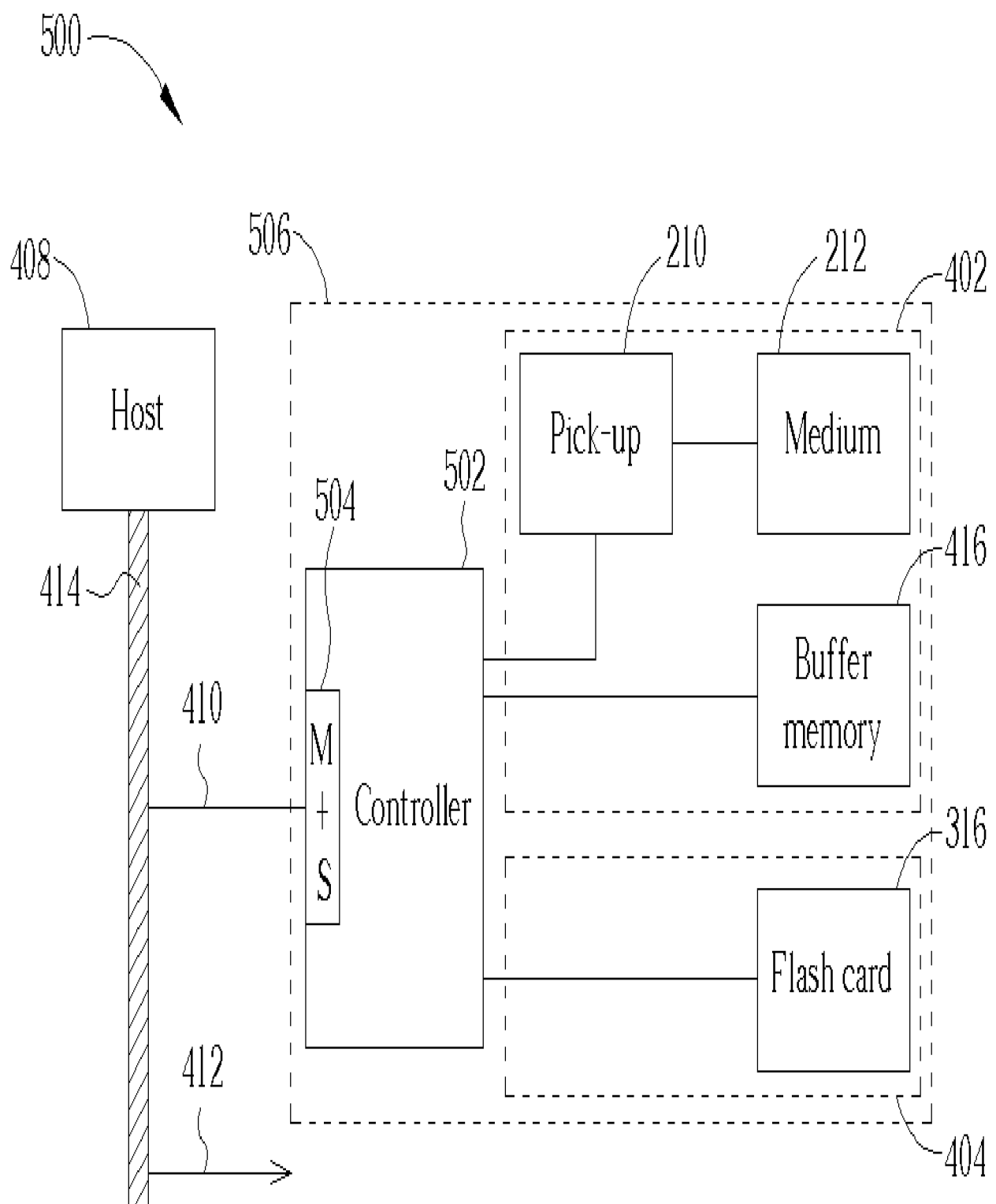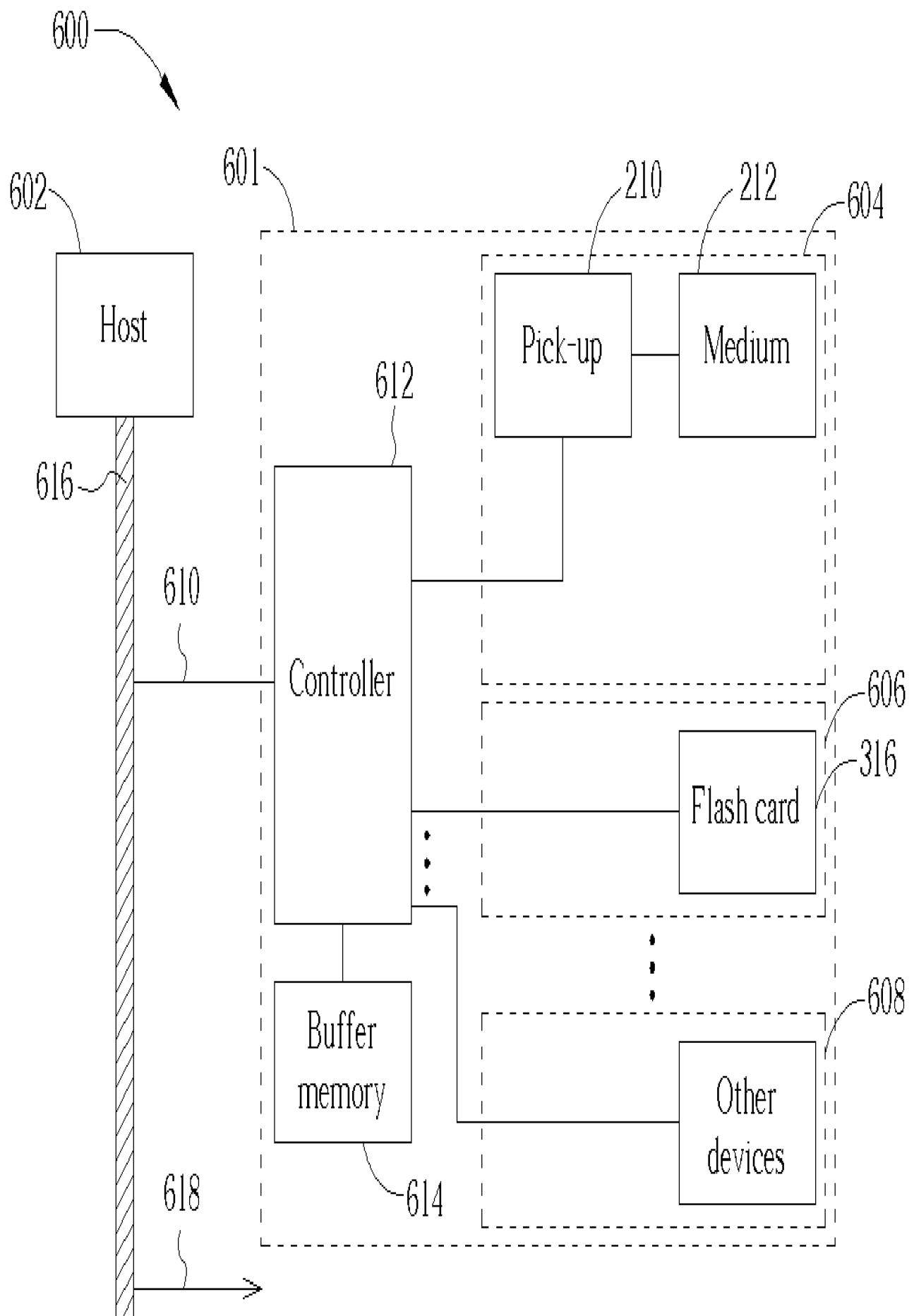
Fig. 6
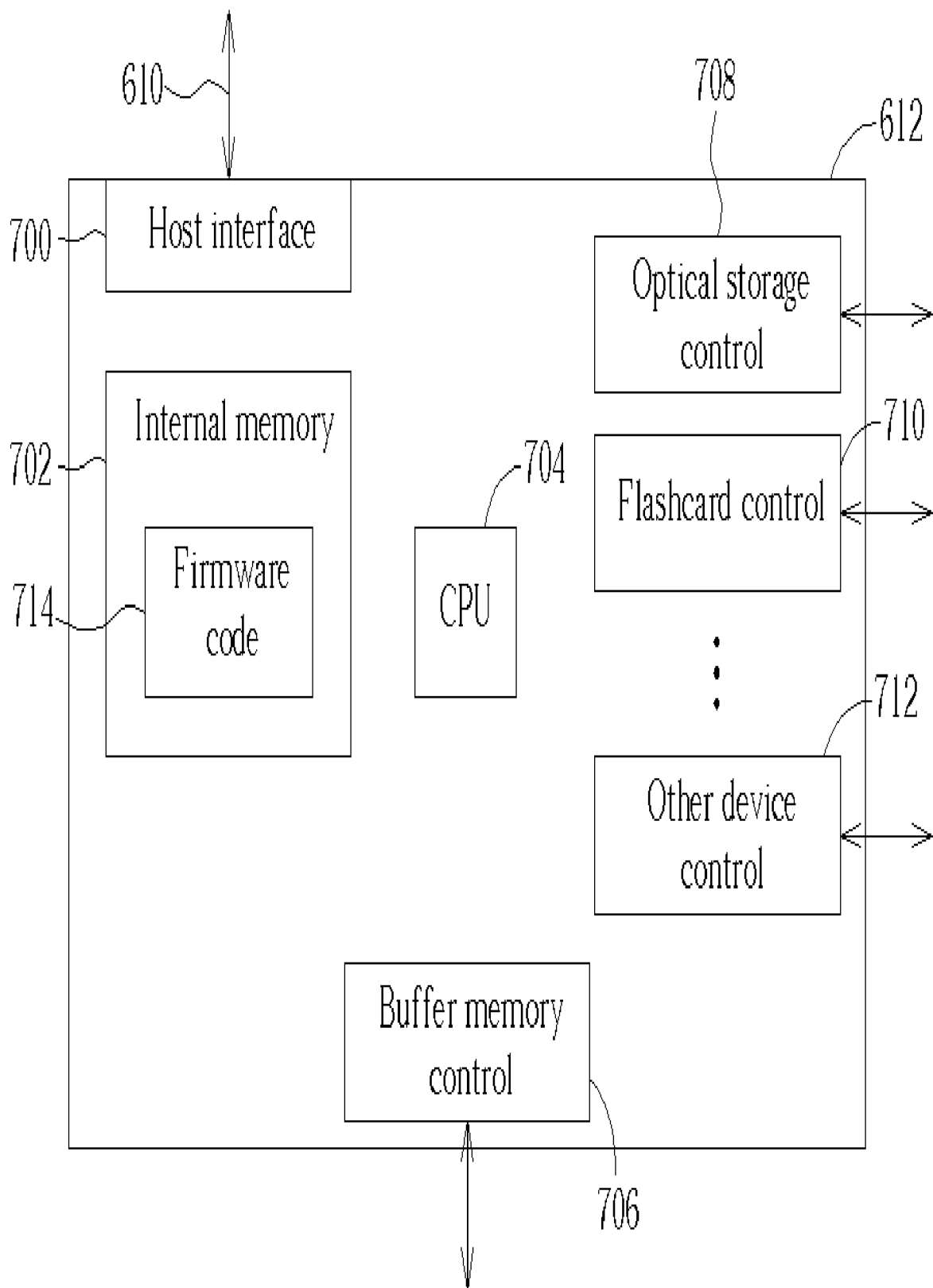
Fig. 7

Bit Byte	7	6	5	4	3	2	1	0
0	Operation code (28h)							
1	LUN (Obsolete)			DPO (0)	FUA	Reserved		RelAdr
2	(MSB)							
3	Logical Block Address							
4								
5								(LSB)
6	Reserved							
7	(MSB)							
8	Transfer Length							(LSB)
9	Vendor-Specific	Reserved				NACA	Flag	Link
10	PAD							
11								

Fig. 8 Prior art

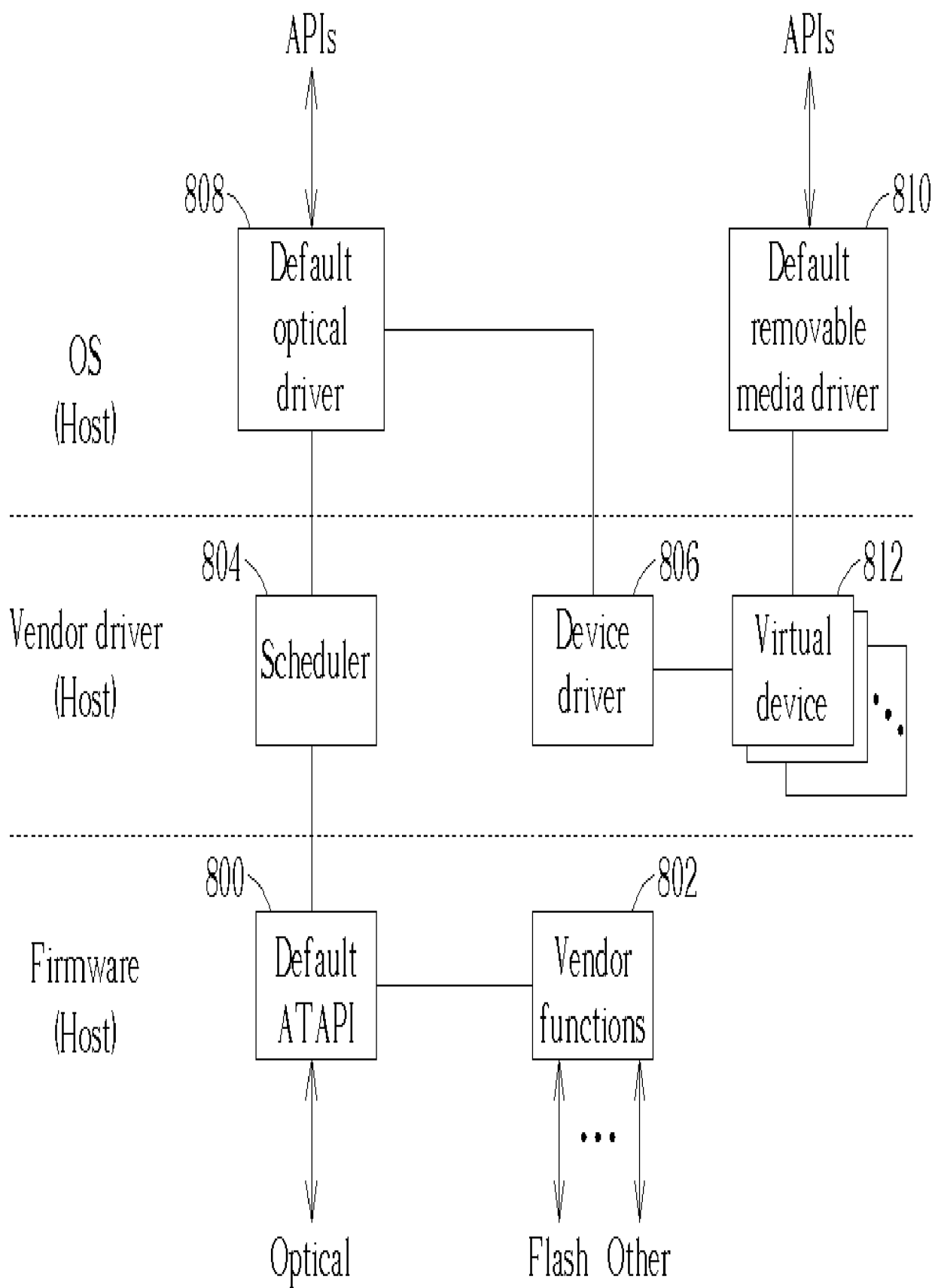| Register	7	6	5	4	3	2	1	0
Features	na							
Sector count	Sector count							
LBA Low	LBA (7:0)							
LBA Mid	LBA (15:8)							
LBA High	LBA (23:16)							
Device	obs	LBA	obs	DEV	LBA (27:24)			
Command	C0h							

Fig. 9 Prior art

APIs

APIs

808

810

OS
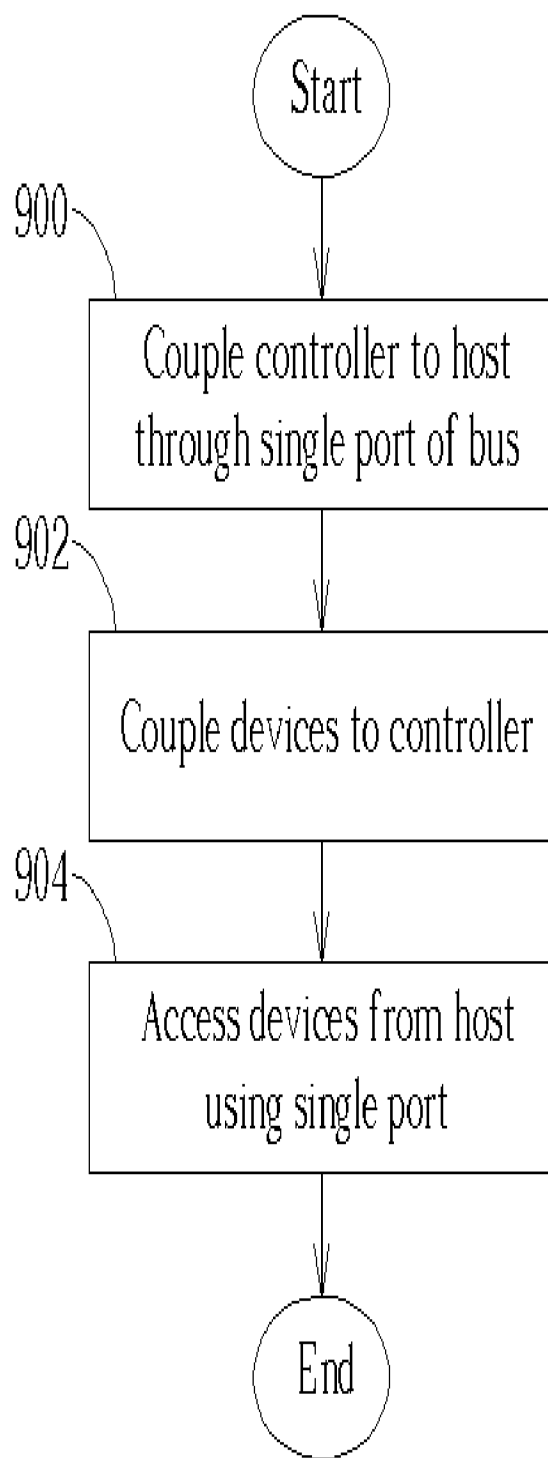(Host)

Default
optical
driver

Default
removable
media driver

804

806

812

Vendor driver
(Host)

Scheduler

Device
driver

Virtual
device

• • •

800

802

Firmware
(Host)

Default
ATAPI

Vendor
functions

Optical

• • •

Flash   Other

Fig. 10

Start

900 — Couple controller to host
through single port of bus

902 — Couple devices to controller

904 — Access devices from host
using single port

End

Fig. 11